

REMARKS

Claim 35 is canceled without prejudice or disclaimer. Therefore, claims 16-34 and 36-45 are pending in the present application. Claim 16 has been amended to specify that the variant has an amino acid sequence which is at least 50% homology with the sequence of SEQ ID NO: 1, as supported by page 3 of the specification.

It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

I. Request for Withdrawal of Finality of the Office Action

Applicants submit that it was premature for the Office to issue a final Office Action. The Action includes a rejection under 35 U.S.C. 102(b) relying on Svendsen et al. (WO 98/38286). This reference was already of record and a rejection based on this reference could have been made in the prior office action. Applicants therefore request withdrawal of the finality of the office action.

II. The Restriction Requirement

The Office maintained the restriction requirement as to claims 43-45 because they are drawn to methods of use of a variant of claim 16 and since a variant of claim 16 is known in the prior art, there is no technical feature linking a variant laccase and methods of use.

Claim 16 has been amended to delete the variant in the prior art reference. Thus, there is a technical feature linking the variants of claim 16 and the method claims 43-45. Applicants therefore request withdrawal of the restriction requirement.

III. The Specification

The Office requests clarification of the % identity between SEQ ID NOS: 1 and 10 because the USPTO search result shows that the two sequences are about 22% identical whereas the specification states that the two sequences are 56.5% homologous.

Applicants submit that both results are correct. According to the USPTO search result, two amino acids are identical when they are the same. However, in Applicants' analysis, two amino acids are homologous when they are chemically similar; they don't have to be identical. Therefore, the % homology is greater than the % identity.

IV. The Objections to the Claims

The Office objected to claim 36 because of an improper recitation of a Markush group. Claim 36 has been amended to correct the recitation.

The Office also objected to claim 39 (which depends from claim 16) as being of improper form for failing to further limit the subject matter of a previous claim. This objection is respectfully traversed.

Claim 16 recites variants of any *Myceliophthora thermophila* laccase comprising a substitution at specified positions. The parent laccase may be any *Myceliophthora thermophila* laccase, including but not limited to the laccase of SEQ ID NO: 10. The laccase of SEQ ID NO: 10 recited in claim 16 is used to specify the positions which are modified. Since claim 39 specifies that the parent laccase is the laccase of SEQ ID NO: 10, claim 39 does further limit the subject matter of a previous claim.

V. The Rejection of Claims 16, 35, 36 and 39-42 under 35 U.S.C. 112

Claims 16, 35, 36 and 39-42 are rejected under 35 U.S.C. 112 as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is respectfully traversed.

The specification fully describes the laccase variants of the present invention. Based on Applicants' disclosure, the skilled artisan would be led to make other mutations in addition to the mutations recited in the claims to obtain the benefits described in the present application. Indeed, mutations at other positions are well known in the art. See, e.g., the references relied on by the Office to reject Applicants' claims, i.e., Svendsen et al. (WO 98/38286) and Pedersen et al. (U.S. Patent No. 5,925,554). Applicants therefore submit that the specification demonstrates that Applicants had possession of the claimed invention at the time the application was filed.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

VI. The Rejection of Claims 16, 35, 36 and 39-42 under 35 U.S.C. 112

Claims 16, 35, 36 and 39-42 are rejected under 35 U.S.C. 112 because the specification is enabling for a variant of *Myceliophthora thermophila* having an amino acid sequence of SEQ ID

NO: 10. In addition, the Office objected to the transition word "comprising." This rejection is respectfully traversed.

It is well settled that "a specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as in compliance with the enabling requirement of the first paragraph of section 112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support." In re Marzocchi, 169 U.S.P.Q. 367, 369 (C.C.P.A. 1971).

Moreover, it is well settled that a patent need not teach and preferably omits what is well known in the art. *Spectra-Physics Inc. v. Coherent Inc.*, 3 U.S.P.Q.2d 1737 (Fed. Cir. 1987).

The specification describes laccases modified at specified positions. In addition, the specification provides that the variants can be modified at other positions and includes examples of such other positions. Indeed, mutations at other positions are well known in the art. See, e.g., the references relied on by the Office to reject Applicants' claims, i.e., Svendsen et al. (WO 98/38286) and Pedersen et al. (U.S. Patent No. 5,925,554). Based on Applicants' disclosure, the skilled artisan would be able to make laccase variants that are modified at the recited positions as well as other positions.

Moreover, it is well known to persons of ordinary skill in the art that the amino acid sequence of enzymes from the same genus and species, e.g., *Myceliophthora thermophila*, are homologous.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

VII. The Rejection of Claims 16, 35, 36 and 39-42 under 35 U.S.C. 102

Claims 16, 35, 36 and 39-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Svendsen et al. (WO 98/38286), which discloses a variant of a *Myceliophthora thermophila* laccase with substitution A506E.

The claims have been amended to delete the substitution A506E. Applicants therefore submit that this rejection has been overcome.

VIII. Conclusion

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to

contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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